Small Business Innovation Research/Small Business Tech Transfer

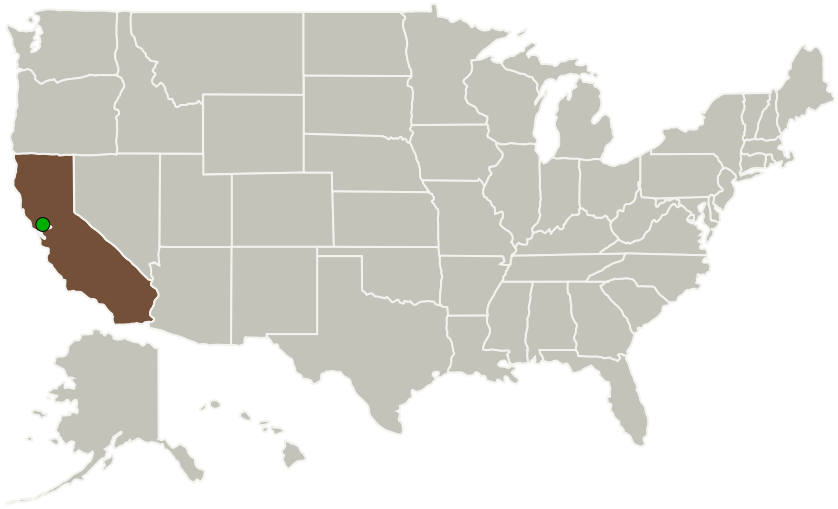
Space Facility for Orbital Remote Manufacturing (SPACEFORM), Phase I

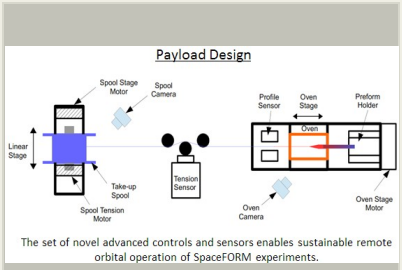
Completed Technology Project (2016 - 2016)

Project Introduction

To address NASA need in continued cost efficient International Space Station (ISS) exploration FOMS Inc. proposes to develop and deploy Space Facility for Orbital Remote Manufacturing (SpaceFORM). The new design of the module will be used on board of ISS initially to process the perspective fluoride glass compositions for optical fiber communications with intent of defining the technical details of the roadmap towards the first volume manufacturing capability on orbit. The unique property of microgravity of improving glass composition properties originally discovered by NASA scientists will be utilized for commercial and cost effective manufacturing of optical fibers with unique properties that would benefit a wide range of applications down on Earth. With high value of optical fibers per unit weight the goal of the development is to drive the expansion of space capabilities through commercially attractive and profitable manufacturing on orbit. The Phase I development will be focused on defining the path for implementation of manufacturing capability on board of ISS. The Phase II will lead to demonstration of the complete hardware and software solution for fiber production in orbital flight environment.

Primary U.S. Work Locations and Key Partners





The set of novel advanced controls and sensors enables sustainable remote orbital operation of SpaceFORM experiments.

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Table of Contents

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Organizations Performing Work	Role	Type	Location
FOMS, Inc.	Lead Organization	Industry Women-Owned Small Business (WOSB)	San Diego, California
Ames Research Center(ARC)	Supporting Organization	NASA Center	Moffett Field, California

Primary U.S. Work Locations
California

Project Transitions

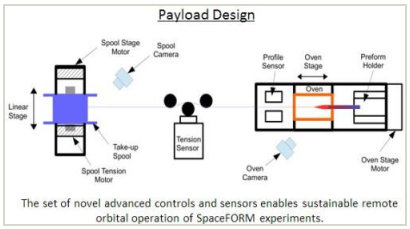
June 2016: Project Start

December 2016: Closed out

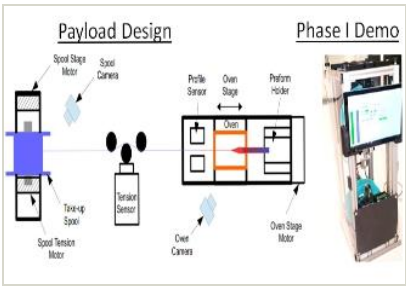
Closeout Documentation:

- Final Summary Chart*(https://techport.nasa.gov/file/139768)*

Images



Briefing Chart Image
Space Facility for Orbital Remote Manufacturing (SPACEFORM), Phase I
(https://techport.nasa.gov/image/135131)



Final Summary Chart Image
Space Facility for Orbital Remote Manufacturing (SPACEFORM), Phase I Project Image
(https://techport.nasa.gov/image/136882)

Organizational Responsibility

Responsible Mission Directorate:
Space Technology Mission Directorate (STMD)

Lead Organization:
FOMS, Inc.

Responsible Program:
Small Business Innovation Research/Small Business Tech Transfer

Project Management

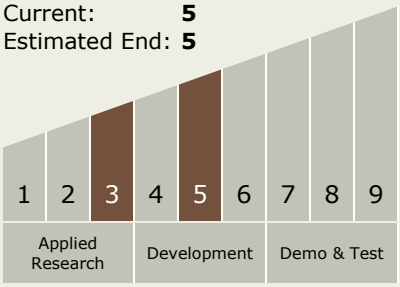
Program Director:
Jason L Kessler

Program Manager:
Carlos Torrez

Principal Investigator:
Dmitry Starodubov

Technology Maturity (TRL)

Start: **3**
Current: **5**
Estimated End: **5**



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Technology Areas

Primary:

- TX12 Materials, Structures, Mechanical Systems, and Manufacturing
  - TX12.4 Manufacturing
    - TX12.4.2 Intelligent Integrated Manufacturing

Target Destinations

The Sun, Earth, The Moon, Mars, Others Inside the Solar System, Outside the Solar System